

Brief Summation Narrative

Police Academy Recruits' Academic Performance Predicted by Initial Education Obtainment Level

Excerpts from
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Donald David Douth

BS CJ., Edinboro University, 1993

BA Sec.Ed., Edinboro University, 1996

The study was reviewed and approved by the Institute Review Board and the study commenced under authorization number 03241-2015 being exempted under a Criterion 1 waiver.

This study covered two training cycles of the Georgia state mandated Basic Law Enforcement (408 hour/10 week) course for initial police certification. Each of the two cycle periods were comprised of ten “graduating classes”, which were extremely similar in demographics and results. The study examined scores from the Criminal Law, Criminal Procedure, and Traffic Law module test segments. The six Georgia Regional Academies, provided recruits for this study’s anonymous survey.

N=448

. Batch Group 1 academy dates ran July 7-September 18 and
Batch Group 2 ran September 29- December 11, 2015.

The data focused on two centers:

Area 1- “Cognitive Test Results”: The normal and customary cognitive exams given by the State approved training academy were issued, graded, in the normal fashion; and the results provided to the students as a reminder so they may accurately transcribe scores onto the survey form. Identifying information was not provided to the researcher. The researcher focused upon four aspects of information. Grouped by class, the researcher requested: *Gender, Age, Education Level, and Scores* (from three cognitive exams: Crime Codes; Criminal Procedures; Traffic Laws)

Area 2- Anonymous survey of attitudes towards education, history of encouragement for higher academic performance, self-help decision making, motivational factors, and general information regarding prior performance in educational settings and standardized test performance. Demographic information was collected including relationship status, existence and presence of children in the household. Immediate prior two employment positions were also sought. This survey was presented and collected by a proxy, in most cases the class instructor.

Aamodt (2004) compiled and published *Law Enforcement Selection: Research Summaries*, containing summaries of the over 300 studies used to conduct a meta-analyses. This study is grateful for the effort of Aamodt’s decade long Meta Analysis work to structure studies in a format which allowed for rapid location of relevant research.

Examination of previous studies led to this researcher being able to classify the research into three “eras” of policing and police studies. They are identified here as the Miranda Era, the Revenue Era, and the Pacification Era (current). The common trends in these eras of study is how the officer is being assessed, upon what judgment value is the study founded. In those studies, surrounding the 1966 Supreme Court case of *Miranda v. Arizona* 384 US 436 (1966) time period the effectual officer was making a number of arrests and receiving recognition awards.

For the studies in the Revenue Era officers’ effectiveness was counted by the number of tickets written and awards received. The Pacification Era examines and judges the officers based upon the number and type of complaints filed against them and the number of “use of force” events. The researchers utilized the data which was readily available for analysis in this they cannot be faulted, but it points to the mindset of the administrations and political leaders of the time periods.

Table 1 Study Era

<u>Miranda ERA</u> 1930-1960s	<u>Revenue ERA</u> 1960s-1982	<u>Pacification ERA</u> 1980s-current
DuBois (1950) = Marksmanship	Sanderson (1977) = Absences	Peterson (2001) = Use of Force complaints

This study differs from a large number of other prior studies in that it concentrates upon recruits’ grades while in the academy, not performance after graduation. Performance measured in the other studies ranged from hand eye skills, attendance at work, number of complaints against the officer, involved traffic accidents, or quantity of arrest/citations made.

A closely related study was conducted by Johnson, T.A. (November, 1998). *The Effects of Higher Education/Military Service on Achievement Levels of Police Academy Cadets*. (Doctoral Dissertation). In his analysis recruits from Houston Texas who had the approximate of an Associate Degree scored overall means increased **0.9835** for some college and for the 60 credit group means increased **2.4447** over those with no college and only military training.

His results align with results observed in Batch 1 recruits of this study:

HS/AS: +1.442;

AS/BS: +0.761;

HS/BS: +2.203

Also consistent similarities were observed for the Total N of this study, with specific exams demonstrating the following increases from high school to associate education levels.

N = 448	Cr. Procedure	Cr. Code	Traffic
Associate	87.269	85.229	82.744
High School	85.606	84.376	82.618
Ave. Increase using Total N	+ 1.663	+ 0.853	+ 0.126

Key premise of this study is that academic failure costs tax payer great expense, over \$309,000 annum estimated for Georgia. Poor academic exam scores are directly tied to making mistakes in actual performance on patrol, which equates to harms to the general citizenry.

According to the Director of the Georgia Public Safety Training Center which oversees all Regional Police Academies, Ray Saxon, his records indicated that over a six-year period from 2010-2015 a total of 7,061 recruits entered the academies. From this number a certain amount had to withdraw for physical injury or other personal/personnel issues, the number there is non-critical to this study. However, the incidents in which a student was removed from the training program due to academic poor performance (failure) is most relevant.

The number of failures during the same period was 303 which equates to 4.29% of the student body. This is a respectable failure rate and in keeping with or below normal distribution for graded academic earnings. What the reader should be kept cognizance of is the costs to a department and thereby the taxpayers in that each failure represents a recruit employee who earns a paycheck during attendance at training.

If using a conservative (lower to an elevated-mid range) amount of pay for the Georgia region at \$10.50- \$15.32 per hour to measure direct costs should each of these recruits fail, just shy of graduation at the 400-hour mark; the costs lost equate to \$1,272,600- \$1,856,784. Breaking the reference period down to an average, the lost equates to \$309,464 per annum, as noted earlier. These figures are not inclusive of uniforms, travel, meals, health insurance, etc.

Form 1 Anonymous Survey

Academy CLASS# : <i>(Demographic characteristics)</i> Gender: M----F. Age: _____. Do you have children? [Yes-----No].	Exams: CrimeC: _____ CrProc: _____ Traffic L: _____ Relationship status: [Single/Divorced ---Engaged---Married]. If yes, do they reside in your house? [No---Sometimes--Yes]
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1. Your Highest education/grade completed: [HS.12---13---14---15---16---17---18---19---20PhD]
2. Generally, what Grades did you average (most often receive) in:

Elementary school? [a---b---c---d---f]
High School? [A---B---C---D---F]
3. What types of classes did you take in High School? [General---- Honors/A.P.---- College credit]
4. If known, what was your High School GPA? (close guess is ok) _____
5. If taken, what year did you take the SAT (college placement test)? [before 1995 / 1995-2005 / after 2005]
6. If taken and if known what was your SAT score? (close guess is ok) _____

SCALES:
 [1Strongly Disagree, 2 Somewhat disagree, 3 Neither Important/Unimportant, 4Agree- 5 strongly agree]
 [1Very Unlikely-----|2Unlikely-----|3Neutral-----|4Likely-----|5Very Likely]

7. Overall how strongly do you believe “education is important”? |1-----|2-----|3-----|4-----|5
8. How strongly do you feel “high grades are important”? |1-----|2-----|3-----|4-----|5
9. If available and affordable, how likely are you to take advantage
 of further school education opportunity? |1-----|2-----|3-----|4-----|5
10. For your work personally, what grade is your personal lowest level of an “acceptable good” grade?
 [a---b---c---d---f]
11. At what grade score would you seek out additional help (tutoring) to improve your grades? [a---b---c---d---f]
12. Do you study “harder/more” if there is an award (recognition certificate) for higher grades?
 [1Never---2Rarely---3Sometimes---4Often---5Always]
13. Does your family/friend(s) generally encourage good grades?
 [1Never---2Rarely---3Sometimes---4Often---5Always]
14. What level of education do you feel is enough for the average person?
 [6---8---12HS---14As---16Bs---18Ma---20Phd]
15. What level of education do you feel is enough for you personally?
 [6---8---12HS---14As---16Bs---18Ma---20Phd]
16. Do you have prior Police Academy Training/Did you attend before (in Georgia or another state)? [Yes---No]
17. Prior to this Police Academy, when was the last (most recent) time, that you were in:
 a “school style environment” (learning by lectures with tests for earned grades) program?
 [(less 6 months ago)---(6mths to 1 yr)---(1 to 2 yrs)---(2 to 4 yrs)---(over 4 years ago)]
18. List the prior 2 jobs/occupations that you had before signing up for the Academy (for certified arrest powers).
 (ex: student, cashier, food server, engineer, truck driver, jailor, repairman, cook).

Most Recent: _____
second Prior: _____

The survey Questions 7-15 were used to establish a Motivational Index. Question 14 pertaining to the recruits' opinion upon what education level was appropriate for the average person, was removed from the Index as it did not measure the recruit's direct personal motivation towards exam scores. The Index point values absolute minimum was 11 with a maximum of 53. The respondents' observed scores ranged from 20-38. The eight questions comprising the Index had a Cronbach Alpha score of 0.546.

The Motivational Index was highly statistically significant Sig. less than 0.006 and correlated to the Criminal Procedure Exam at $r = 0.131$; Highest Education at $r = 0.283$; Desire for maximum level of Personal education at $r = 0.607$. Resulting from the report of a recruit's desire to achieve a declared threshold of education the Desire variable was compared to actual achievements which showed a highly significant, beyond the 99% level, correlation $r = 0.537$. The Motivational Index demonstrates that educational obtainment and exam scores are related to a characteristic drive to succeed. The low Cronbach score still places the relationship as questionable.

In order to keep this study to minimal invasiveness upon the Academy schedule and routine, limited to an estimated 10 minutes, the Motivation topic was only superficially broached here. The survey as designed revealed a lack of investigational depth to thoroughly demonstrate what factors provide the private moxie to compel a recruit to perform to the best of their ability academically.

For instance, the survey could not measure a value of a monetary bet to obtain a certain score, nor could it capture the drive to honor a deathbed wish of a parent to excel in training, as a hardening fortitude for a recruit. This would require a completely different study and a much greater survey length. For educational teaching methods it is important to determine what motivates students to dedicate effort and strive to perform to their fullest potential. This allows for greater material command and retention and for the most accurate assessment of the instructional learning techniques being used. This study did not examine study habits to determine its influence upon test scores.

The fewer mistakes made in the classroom expectantly may well carry over to street scenario real life events with marked fewer mistakes in calls for service and court cases.

Table 13 Exam scores by ADJ education (Categories)

Exams	Criminal Procedure	Crime Code	Traffic Law
Education Level			
Master	91.496	87.092	85.573
Bachelor	89.400	87.027	85.270
Associate	87.269	85.229	82.744
High School	85.606	84.376	82.618

Figure 1 Exam Means by 4 level education

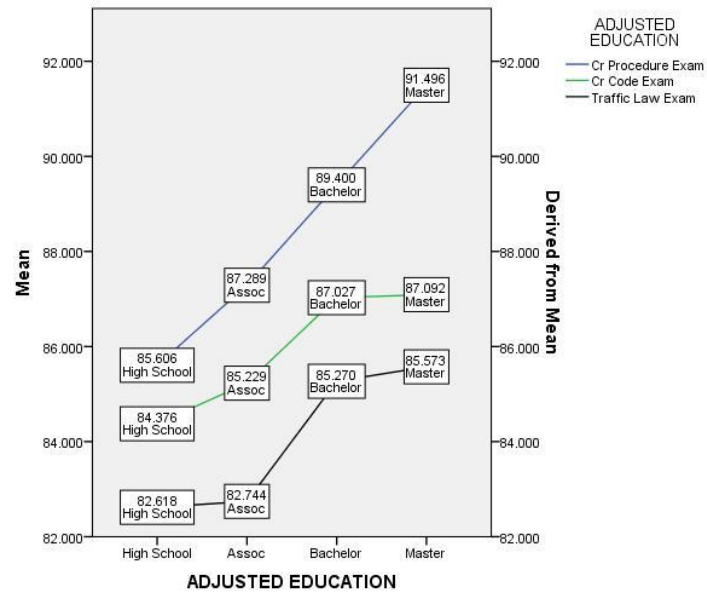


Table 16 Exam quartiles

Statistics

		Cr Code Exam	Cr Procedure Exam	Traffic Law Exam
N	Valid	446	445	446
	Missing	2	3	2
Mean		85.27020	87.07339	83.39027
Median		86.00000	88.33000	84.00000
Mode		90.000	80.000^a	80.000
Std. Deviation		7.067934	7.090613	6.601002
Minimum		61.000	66.000	68.000
Maximum		100.000	100.000	98.000
Percentiles	25	80.94250	82.33500	78.33000
	50	86.00000	88.33000	84.00000
	75	90.77000	92.86000	88.00000

Total N DATA

a. Multiple modes exist. The smallest value is shown

When scrutinized by individual exam type, Criminal Procedure had the greatest overall increase for lowest to highest education levels from: High School to Master = +5.89,

Traffic next with an increase (HS/MS) = +2.95,
 Crime Code increased (HS/MS) = +2.72.

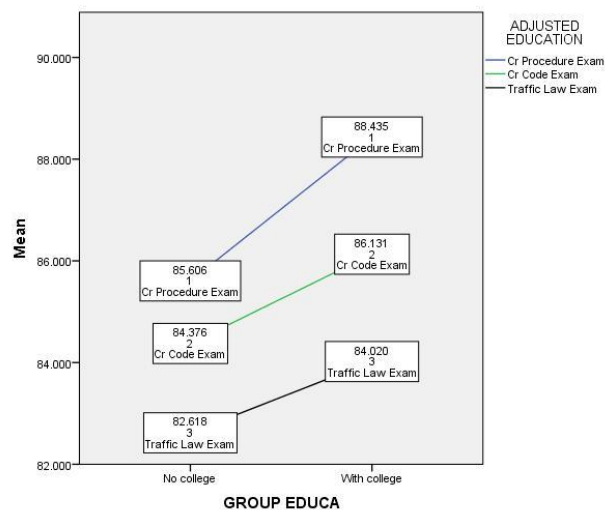
Table 14 Exams With or No College

Exams	Criminal Procedure	Crime Code	Traffic Law
Education			
With College	88.435	86.131	84.020
No College	85.606	84.376	82.618

ANOVA 1 Grouped education (With v. Without College)

	ANOVA	
	F	Sig.
Cr. Code	3.658	0.027
Cr. Procedure	9.528	0.000
Traffic Law	3.584	0.029

Figure 2 Exam means with & without college



The study analysis revealed no statistical relation between gender sub-set groups and the obtainment of more years of education. The mean scores for female recruits did average just below male recruits. Gender based scores were the largest difference on Procedure at 3.34 points but the least different on Traffic exam at only 1.3 points difference.

However, when gender was examined relative to test scores separately the Independent t-Test revealed significance for Crime Code & Procedure scores. When combined overall exam scores were Significant and females scored 2.2 points below males.

Crime Code	t= 2.475, Sig 0.014	Male 85.688 Female 83.603
Cr. Procedure	t= 3.995, Sig 0.000	Male 87.720 Female 84.381
Traffic Law	t= 1.05, Sig 0.10	Male 83.618 Female 82.314
Average 3 Exams	t= 3.487, Sig 0.001	Male 85.69 Female 83.45

Male recruits outnumbered females four times, thereby possibly providing unfairness in scrutiny of the exam averages. While the lowest valid score was held by a 12th grade education level recruit who was female. It is imperative to note the highest academic average of all 448 recruits was female; she held a 16 year education level. Gender is indicated to not be a determining factor of personal performance while education markedly is.

Examination of the top ten highest scores reveal trends (equating to the top 2%) that are consistent with the hypothesis of the study. Fifty percent of recruits had been in formal learning environments less than six months before the academy. Overwhelmingly 60% have an education of Bachelor or above. While a majority were married, they also had no children both variables measured at 60%.

The distinctions that become apparent with examination of the lowest ten recruits show that overwhelmingly they have a High School education 80% of the time. Their recentness of being in a formal education environment with in the last six months was a mere 10%. Forty percent were married, however 60% had children in the residence. Both the highest and lowest score groups comprised of 80% having no prior police training

Table 15 Characteristics of HI/LO 02%

Category	Top 2%	Bottom 2%
Recent @ < 6months	50%	10%
Education	Bachelor or above = 60%	High School = 80%
Relation Married	60%	40%
Children in residence	Yes = 40% / NO = 60%	YES = 60% / No = 40%
Police trained NONE	80%	80%

Table 10 Exam Means for Prior Police

Group Statistics			
	Prior Police Exper	N	Mean
Cr Code Exam	Yes	35	84.85057
	No	408	85.29385
Cr Procedure Exam	Yes	35	87.84971
	No	407	87.00064
Traffic Law Exam	Yes	35	83.43943
	No	408	83.36360

Having prior exposure to police academy materials revealed very nominal benefit for recruits but only on two of the exams did that sub-group demonstrate a higher average mean. Another study with greater N of gender and prior experience may further clarify the influence of these two sub-sets, but this was not a focus of this present study.

This research demonstrates that a strong correlation exists between the three written exams. This researcher therefore recommends that the academy should at the earliest opportunity issue the Criminal Procedure exam in order to identify recruits who may demonstrate an at risk academic performance based upon a very low test score. The academies should also strive to stimulate the recruits to think at the Deep study level of Learning Transferal. Instruction on the correct manner to highlight written materials and proper study habit techniques should be addressed.

CONCLUDED

Data do allow for rejection of the Null Hypothesis. Education beyond High School increased test scores by 3.04 and 3.86 percent for Bachelor and Master Degrees respectively for combined total means. Analysis reveal positive Pearson's correlation, albeit weak (.14-.23), between more years of education and an increase in written exam scores with very high statistical significance (99%) of reliability. ANOVA analysis of education levels indicated increased means between four major educational degree marker years with value of $p < 0.02$